DLM1771-DLM1772(Y)-DLM1775(Y)

Integrated Camera Positioning

w/Optional Dual IR Lamps

Installation and Operations Manual

Model Number: DLM1771, DLM1772, DLM1775,
DLM1772Y, DLM1775Y

Description: Integrated Camera Positioning System
with optional dual IR Lamps, Heater,
Wiper and Day/Night 18x, 23x, 26x, 30x,
35x and 36x Zoom

Table of Contents DLM1771-DLM1772_DLM1775 and DLM1772Y-DLM1775Y with optional dual IR Lamps	page
1. Installation	3
1.1 Foreword	3
1.2 Outline	3
1.3 Safeguards and Warnings	3
1.3.1 Functions and Features	3
1.3.2 Function Descriptions	4
2. Preparation for Installation	7
3. Installation Warnings	3
3.1 Pedestal Installation	8
3.1.1 Equipment List	8
3.1.2 Installation Instructions	9
Wiring Diagram	10
3.2 Wall Installation	13
3.2.1 Equipment List	13
3.2.2 Installation Instructions	14
Wiring Diagram	15
4. Technical Parameters	17
4.1 Structure	17
Mechanical Diagram	18
4.2 Rotating parameters	19
4.3 Electrical parameters	19
4.4 Camera parameters	19
4.5 IR Lamp Parameters	20
5. Operation	22
5.1 Basic Descriptions	22
5.2 Operation Procedures	23
5.3 Preset Functions	24
5.4 Screen Character Display	24
5.5 PTZ Functions	25
5.6 Function Descriptions	25
6. Menu Operations	25
6.1 Menu Operation Instructions	26
6.4 Camera Menu	28
6.6 Pan/Tilt Menu	30
6.7 Initialization (Powering Up)	31
6.8 Privacy Zone	32
6.9 Alarms	34
6.10 Auxiliary (Wiper and IR Lamp)	34
6.11 Reset Camera	34
6.12 Washer/Wiper Function and Wiper Controls	34
6.13 Menu for DLM1771 with Hitachi 1/3” CCD 18x D/N Camera	35
7. Dip Switch Settings	36
7.1 Pan Tilt Controls	36
7.2 Switch SW1 Protocols, Camera Modules, Baud Rate Settings	36
7.3 Switch SW2 Receiver/Driver Settings (P and D Protocols)	37
Appendix A Troubleshooting	39
A.1 Video Image	39
A.2 PTZ Controls	39
A.3 Installation	40

1. INSTALLATION MANUAL

1.1 FOREWORD

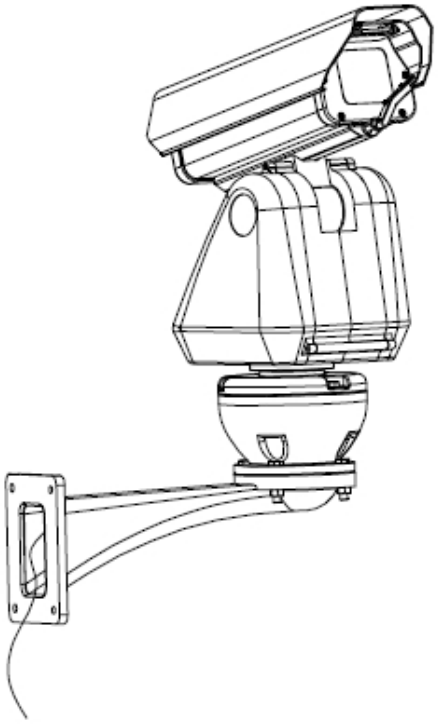
This manual introduces the function, installation and operation of the integrated high speed pan tilt camera in details. Please thoroughly familiarize yourself with the information in this manual prior to installation.

This series pan tilt camera is specially designed for airports, homeland security, customs, highway etc. It has many features: reliable, stable, airproof, waterproof, acid water proof, able to withstand high temperature, aging, strong wind and so on. It adapt to the following harsh conditions, such as high wind power, wide changing temperature conditions, high electromagnetism and lightning and continuous operating conditions.

This series integrated positioning system includes high speed decoder, pan tilt, shield, heater, defroster, wiper and integrated DSP ((digital signal processing) camera module day/night 23x, 26x, 36x optical and 12x digital zoom.

Protocol P/D is employed in the received driver of the integrated positioning system. It may support standard system platforms such as keyboards and matrix switchers. This manual will not explain the operation of other devices if connecting with system, please read the manual of the interfacing product or device.

1.2 OUTLINE



1.3 SAFEGUARD AND WARNINGS

Prior to installation and use of this product, please note the following WARNING. This product may be only used in specified range in order to avoid any damage or danger.

- Installation and servicing should only be done by qualified service personnel;
- It may not be used in temperature range, humidity and power supply outside the specifications.
- Only use replacement parts recommended by factory.
- Please use soft cloth to clean the glass. Use neutral cleaner if smear is present on the glass. No use of strong or corrosive cleanser to avoiding scuffing.
- Be cautious when moving P/T unit, never press the drive parts heavily to avoid pan tilt camera troubles.
- The installation bracket should be capable of supporting four times the total weight of the integrated camera.

Please thoroughly read this manual prior to installation and operation.

1.3.1 FUNCTIONS AND FEATURES :

- Pan tilt camera is made of high strength all-alloy material, waterproof, and able to withstand high temperature, aging, and corrosion.
- Accurate motor driving, stable operation, sensitive reaction and accurate orientation
- Includes built-in function menu, to set camera and pan/tilt parameters.
- Features video freeze, back light compensation function
- Pattern track memory function, may record the preset transfer and all standard P/T/Z track
- Change speed proportionally - Pan/tilt speed and the depth of zoom lens decline proportionally
- 128 preset position, with accuracy error less than 0.1^0
- Preset target speed: 150^0 /sec for pan, 80^0 /sec for tilt
- Manual control speed: 0.1~100^0/sec for pan control, 0.1~80^0/sec for tilt
- Alterable auto scan speed: 1^0~40^0 /sec may be set by the in-built menu
- 8 preset tour functions, dwell time may be set to 2- 60sec
- Pan rotation: 360^0 continuously rotating
- Tilt rotation: -85~ +35^0 rotation, with auto flip function
- Manual control speed for pan: 0.1^0 ~100^0/sec
- Manual control speed for tilt: 0.1^0 ~80^0/sec
- Video output: PAL/ NTSC format, composite video: 1V p-p
- Baud rate: 1200/2400/4800/9600 Baud
- RS-485 communication for control of pan tilt
- IR Illuminator for night vision to 100 meters
- Built-in wiper, heater, fans, defrost module
- Washer Wiper Preset Linkage
- Embedded surge and lightning circuitry
- Complies with CE, FCC and IP66 standards,
- Working temperature: -40 °C ~ +50 °C

1.3.2 FUNCTION DESCRIPTIONS

Screen menu function (OSD)
It has screen menu function. All information of camera and pan& tilt may be displayed by menu and to set the function and parameter

Multi-camera control function
Select different camera only by mending dial switch setting, no any hardware or software needed. It supports SONY, HITACHI cameras and so on.

Proportional pan
Horizontal and tilt speed change automatically with the zoom changes. When zooming wide, the camera speeds down; then zooming narrow, the camera speeds up to catch better tracing effect.

Auto scan
Auto scan refers to the function of 360^0 continuous scan the images at certain speed on the horizontal lever when keeping the pitching angle unchanged. The left and right limits may be set for continuous scan at certain speed on the horizontal lever.

Auto Flip
When the camera tilts downward and goes just beyond the vertical poison, the dome rotates 180°. When the dome rotates, the camera starts moving upward as you continue to hold the joystick in the down position. Once you let go of the joystick after the dome rotates, joystick control returns to normal operation. The auto flip function is useful for following a person who passes directly beneath the camera.

Preset
Any position of dome camera PTZ may be conserved. We call it preset (pre-established position). The preset may be transferred and cleaned.

Preset Tour
The dome camera will transfer pre- established preset 1-8 every 10 second. It will leap over to next preset position if position in not among 1-8.

Pattern
The PTZ orientation move track of the camera may be stored, we call it pattern. The pan & tilts UP, DOWN, LEFT, RIGHT and the lens FAR, NEAR may be stored. Also we may call the presetting. This function may be used to record and simulate the operator's operation process.

Zero Test
The camera will turn to horizontal and tilt zero by preset 34 when the inevitable desynchronizing appears or the operator wants to find zero position during working process. It may reset the orientation and is convenient for operator

Low LUX (colors/ black & white swift) function
The camera automatically changes CCD LUX according to surrounding light. Color

image changes to black& white one in low LUX; black & white image changes to color one in high LUX (related to camera)

Auto focus
The camera automatically adjusts lens focus to keep clear image if auto focus mode. Manually operate FAR or NEAR focus adjustment may also adjust focus. The dome camera will recover auto focus adjustment function if operate horizontal, vertical rotation or control lens zoom.

Auto iris function
The camera automatically adjusts iris to keep normal brightness in auto iris mode. Manually operate OPEN or CLOSE iris adjustment button may also adjust iris. The dome camera will recover auto adjustment function if operate horizontal, vertical rotation or control lens zoom.

Backlight compensation
The object will become black as the shadow if strong light appears in background. Backlight compensation function may compensate the brightness automatically to dark objects in bright light background and adjust the brightness background to avoid the image full of brightness and get clear image. Too strong backlight may make the object illegibility.

WDR (Wide Dynamic Range)
If there is quite dark and quite bright in the image, on Hitachi 30x and 35x, Sony 36x, WDR may make the darkest and brightest balance to keep clear image

Privacy masking function:
The user may set the region which may not be seen by the operator. The region which has been covered will move together with the pan tilt direction, change together with the size of the image, and cover the region which need to be invisible always.

Options for wiper control：
By OSD menu, the wiper may be controlled by three ways: （1）single-control mode: The wiper will stop after 15 sec when receiving the control instruction. （2）Circle startup mode: When receiving the control instruction, the wiper will run for 5 sec, then stop for 15 sec. And it will not stop until it receives the control instruction for stop.（3）Linkage mode: when receiving the control instruction, there will be a linkage with the AUX switch, and the function of 65 preset will be carried on.

2.2. PREPARATION FOR INSTALLATION

1) All electric working must be accorded to latest electric, fire proof and related specifications
2) Be sure all accessories are included as packing list and application and installation requirements. If not, please contact with supplier.
3) Be sure the product is suitable for the working environment.
4) Check installation space.
   Make sure there is enough space for the product and accessory.
   Make sure the wall may afford 4 times of the speed dome camera and accessories.
5) Preparation of cable
   Use video cable according to transmitting distance. Specification of video coaxial cable features:
   a) 75 ohm resistance
   b) copper core cable
   c) 95% copper shield.

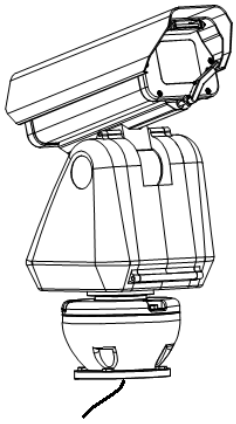
2.3 INSTALLATION WARNINGS

1) Prior installation, read the instruction carefully.
2) To use the power supply and voltage as the label instruction of cable, standard voltage is 18VAC, 24VDC, 230VAC are available versions.
   Long time excess high or low voltage will cause damage of speed dome camera.
   Electric power must be kept over 50W (3.5A with IR Lamps), otherwise abnormal reset and erratic movement may result.
3) Don’t aim the lens at high light object, otherwise CCD will abate and no image or image fuzzy.

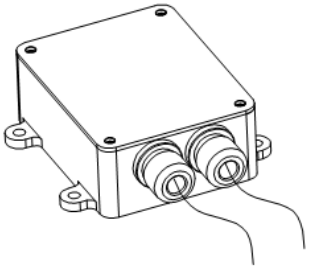
3.1 PEDESTAL INSTALLATION

The pedestal installation camera includes the following parts. Inspect each package to make sure all parts are present.

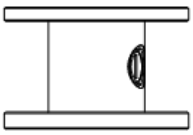
3.1.1 Equipment List



Integrated pan tilt



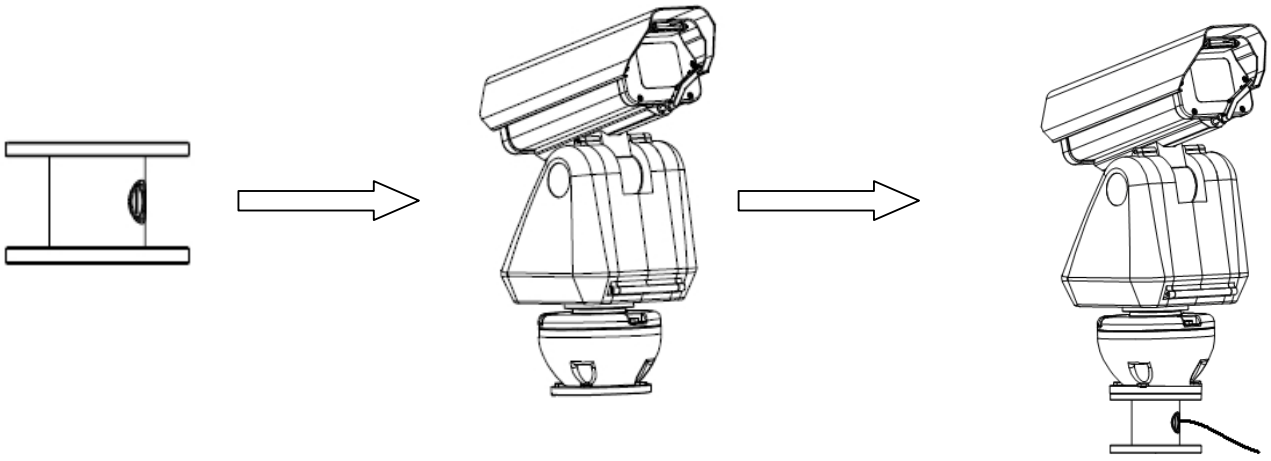
Power Supply Box



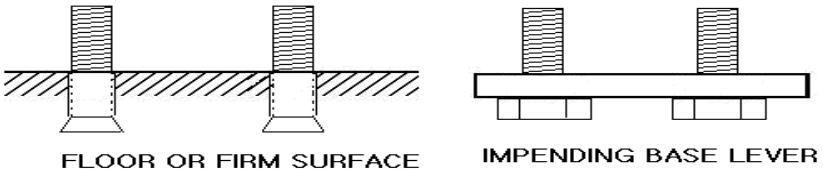
Pedestal mount

Integrated pan tilt	1 pc
pedestal	1 pc
wall bracket	1 pc
connecting cables	1 pc
fixed spanner	1 pc
pedestal water joint	1 pc
manual	1 set
Glove	1 pair
Thread compound	1 roll
Fixed screw Φ5X10mm (platform)	4 pcs
Φ8X38mm bolts	4 sets

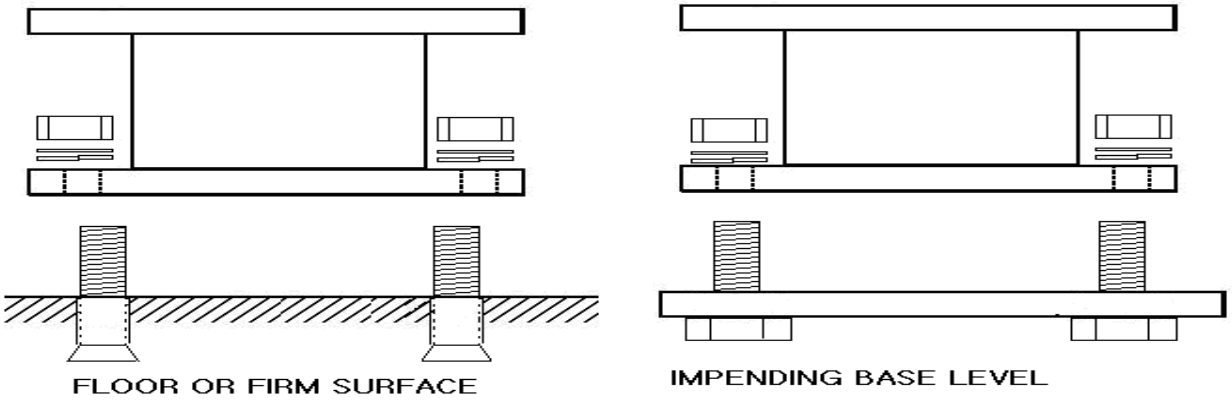
3.1.2 INSTALLATION INSTRUCTIONS



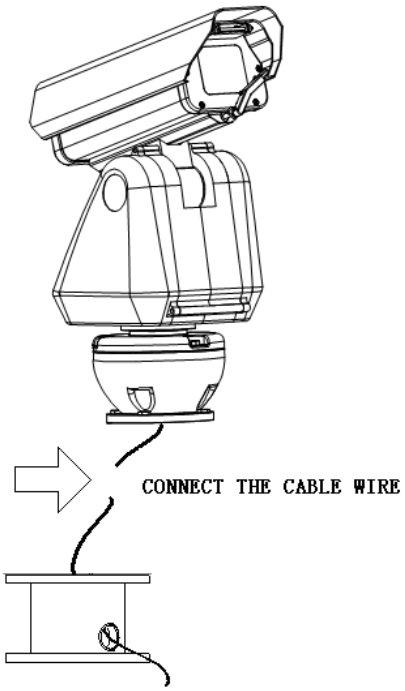
STEP 1 Locate the floor or impending base level that may support 4 times the weight of pan tilt. Fix the screws provided on the floor or firm surface.



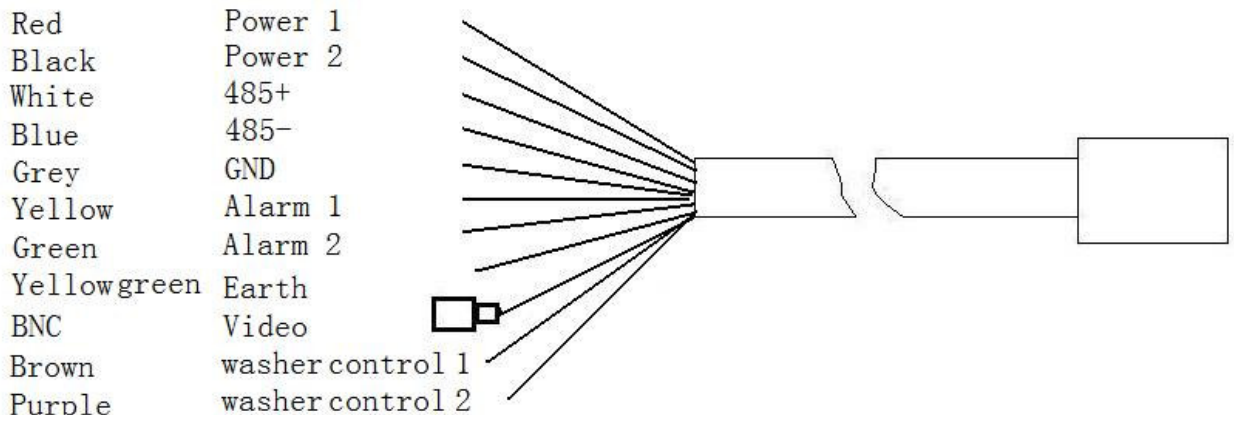
STEP 2 fix the pedestal on the floor or impending base level:



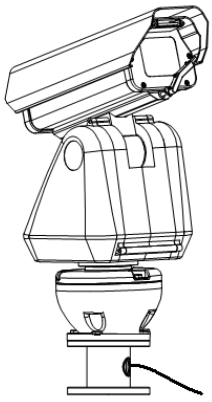
STEP 3 Install power supply, video output, RS-485 control input wiring through waterproof connector plugs, and connect them to the corresponding power supply, video, RS-485 wiring of the cable provided.



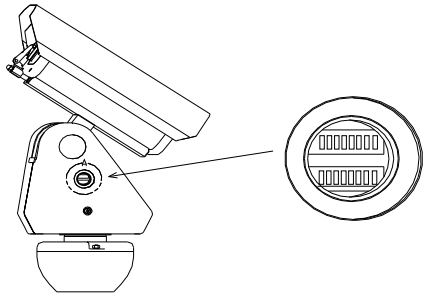
Connect the cable according to the following pinout diagram:



STEP 4 Fix the four Φ5x10 fixed screws on the pedestal, then install the connecting cable into the pedestal and screw it with waterproof BNC plugs.



STEP 5 Loosen the screw nut cover on the pan tilt's left side, to expose the 8 DIP dial switch. Set the protocol, baud rate, address for the pan tilt. Screw the nut cover tightly after completion of settings.



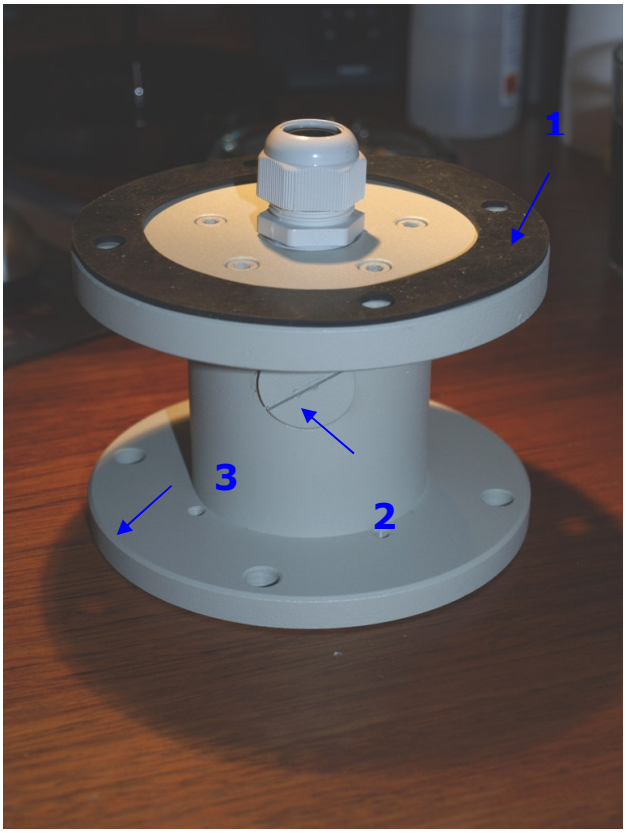
STEP 6 Turn on the power to check operation.

DLM177x Pedestal Mount

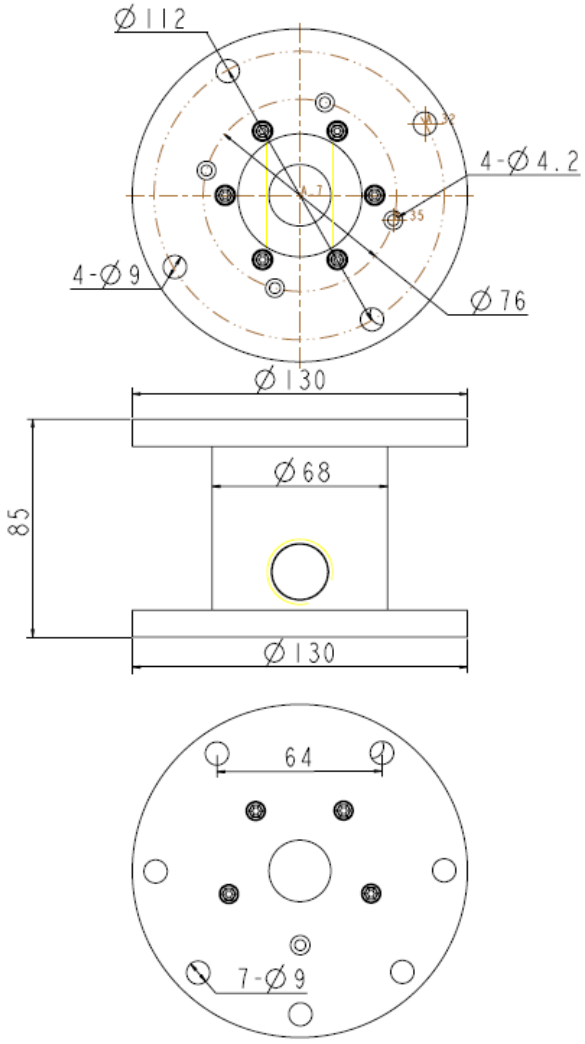
* Inverted View of mount
* Maximum Bearing Weight 100Kg
* Aluminum alloy material

1. Rubber Gasket for top of pole
2. Cable Gland cover
3. Top of mount for installing

DLM177x Integrated camera system



Dimensional Drawing: (unit: MM)

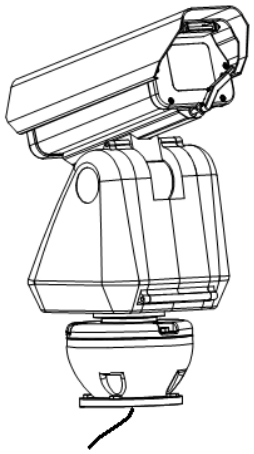


DLM177x Pedestal Mount

3.2 WALL INSTALLATION

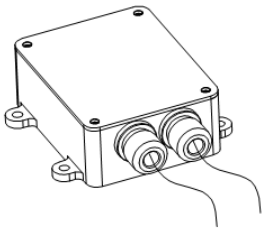
The wall installation camera contains following parts. Inspect each package to make sure all parts are present.

3.2.1 Equipment List



Integrated Pan Tilt

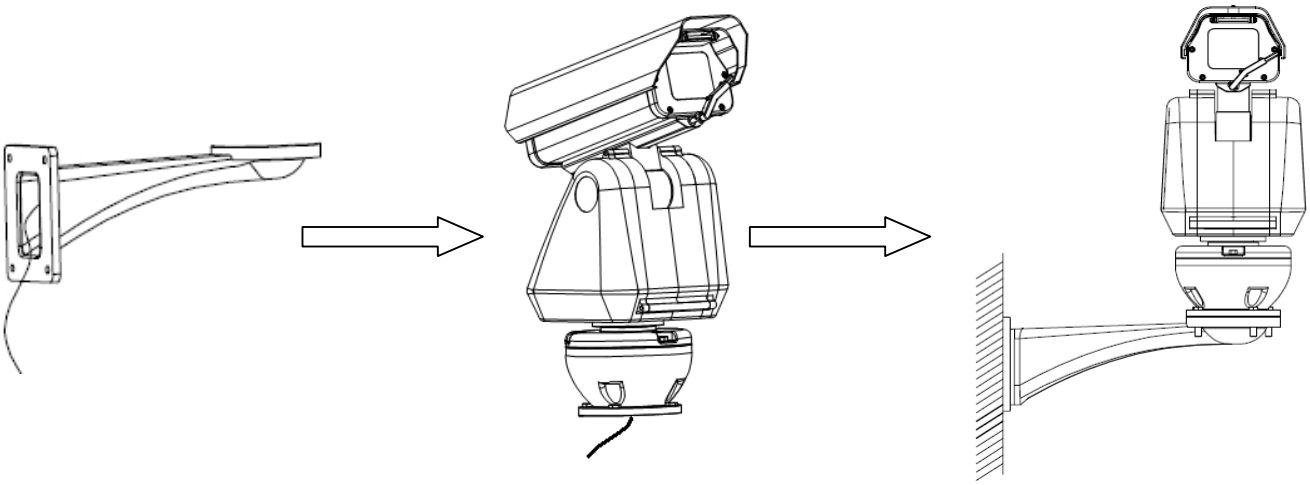
Wall Bracket



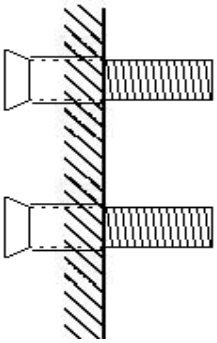
Power Supply Box

Integrated pan tilt	1 pc
pedestal	1 pc
wall bracket	1 pc
connecting cables	1 pc
fixed spanner	1 pc
pedestal water joint	1 pc
manual	1 set
Glove	1 pair
Thread compound	1 roll
Fixed screw Φ5X10mm (platform)	4 pcs
Φ8X38mm bolts	4 sets

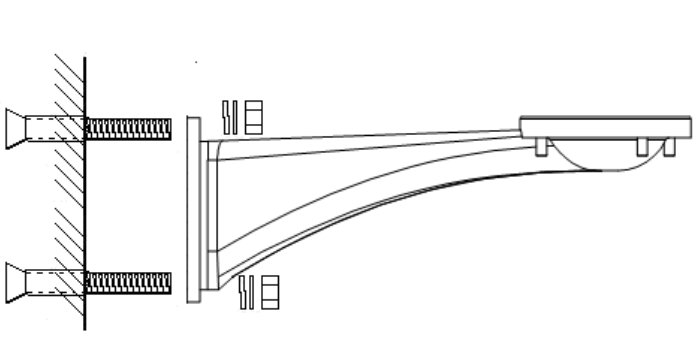
3.2.2 Installation Instructions

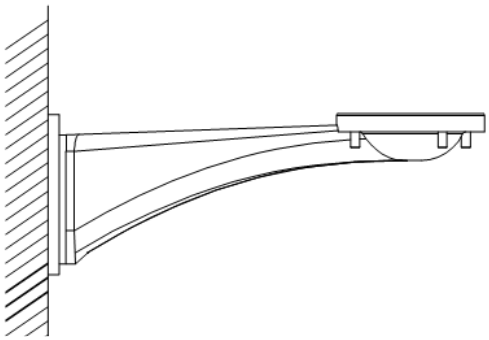


STEP 1 Install the Φ8mm screws on the wall (refer to the following picture)

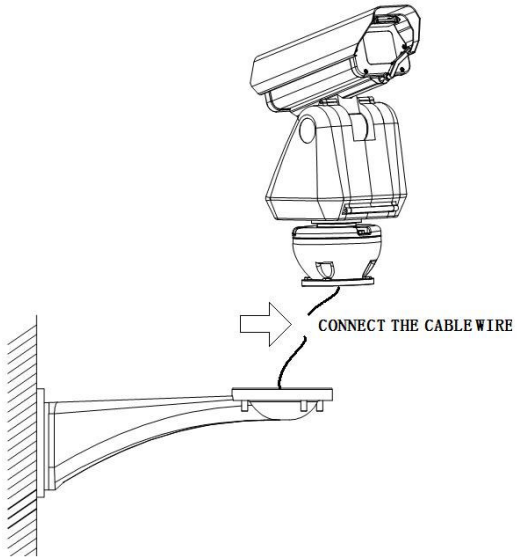


STEP 2 Install the power supply box on the wall if power supply box is required, then install the wall bracket on the power supply box. If no power supply enclosure is needed, install the bracket directly on the wall.

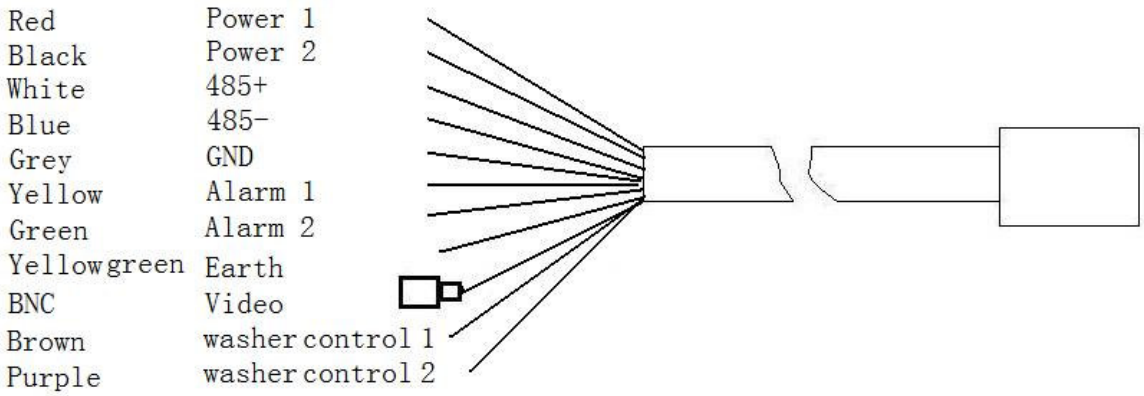




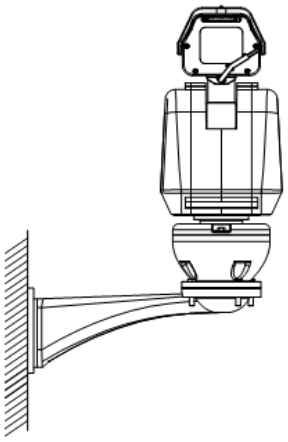
STEP 3 Install power supply, video output, RS-485 control input wiring through the body of the bracket and connect them to the corresponding power supply, video, RS-485 wiring of the cable provided.



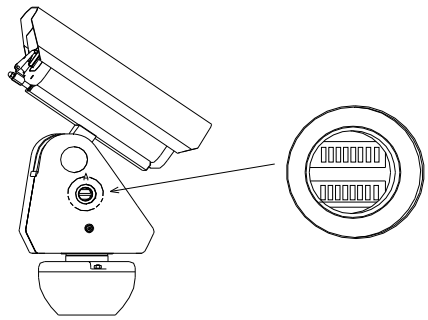
Connect the cable according to the following pinout diagram:



STEP 4 Connect the cables. Connect the cables from the platform wih the power supply wiring, video wiring, RS-485 control wiring from bracket accordingly- use the 4 pcs Φ5×10 fixed screws according to diagram below.



STEP 5 Loosen the screw nut cover on the pan tilt's left side, to expose the 8 DIP switch. Set the protocol, baud rate, address for the pan tilt. Screw the nut cover tightly after completion of settings.

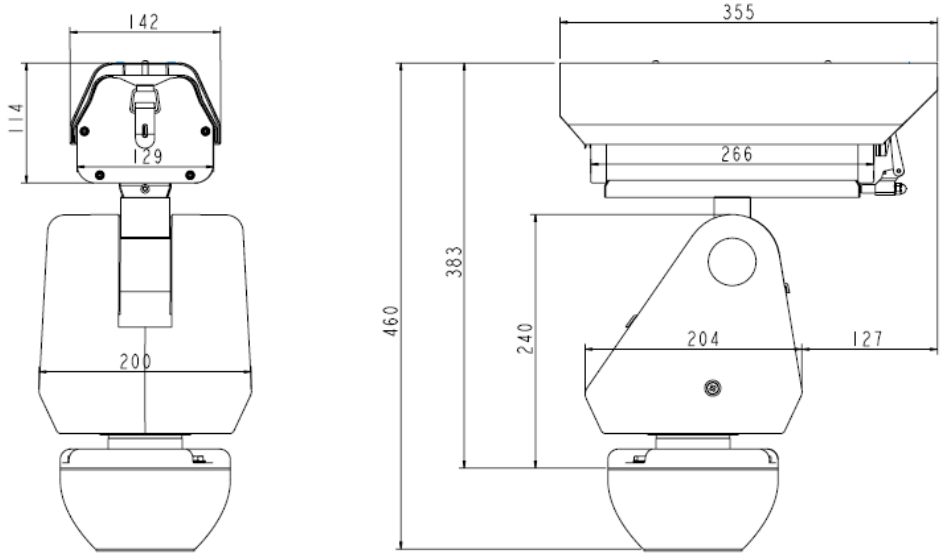


STEP 6 Turn on the power to check operation

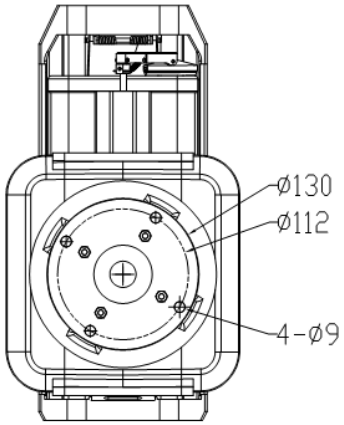
4. TECHNICAL PARAMETERS

4.1 Structure parameters:

Integrated pan tilt	Aluminum alloy
Rotating platform	Aluminum alloy
Load weight mode	top bear
standard Load weight	5Kg
Shield module	with housing, defrost device, heater and fans
installation	wall mount, pedestal mount
bracket requirement	4 times of the pan tilt's weight
operating temperature	-40ºC ~ 50ºC
Dimension	as the following dimension picture
Weight	Net 14Kg; Gross 18Kg
Weight with IR Lamps	Net 16.5Kg; Gross 19Kg

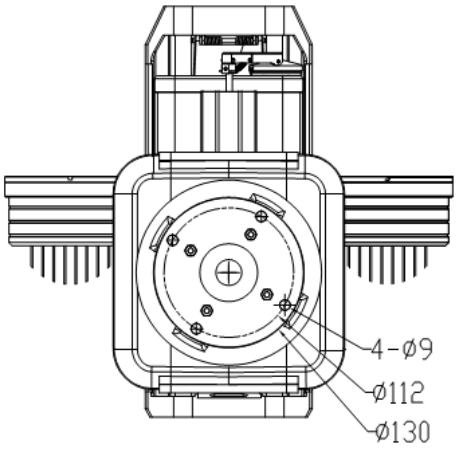


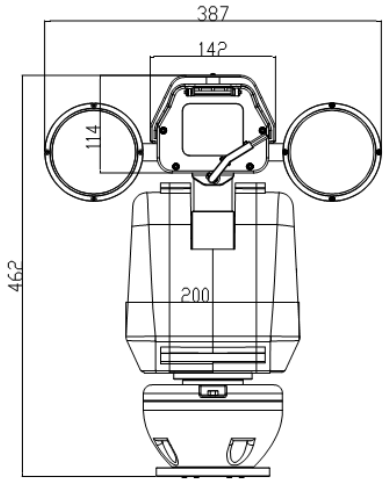
Installation dimensions (no IR Lamps):



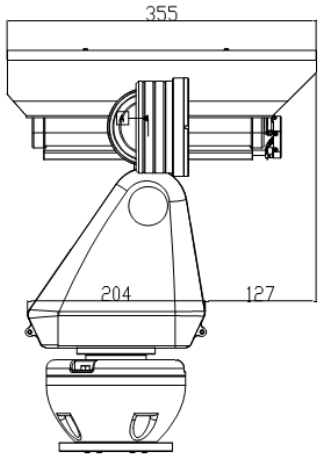
DLM1771-DLM1772-DLM1775

Installation dimensions with LED IR Lamps



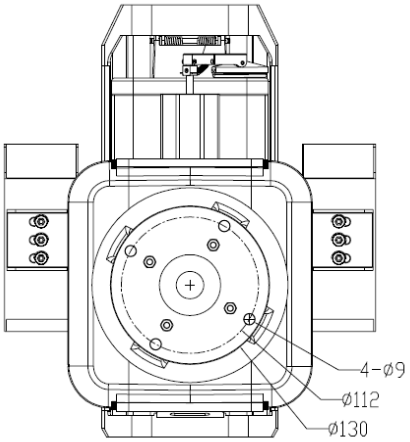


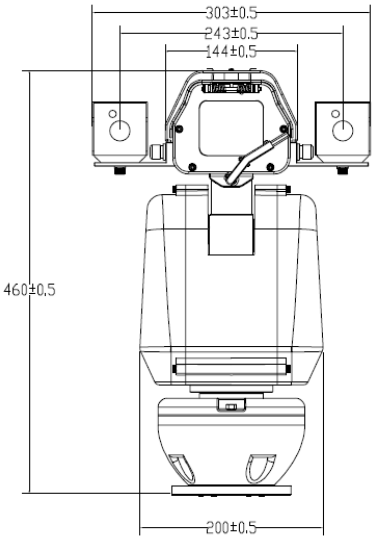
front view dimensions w/ IR (LED)



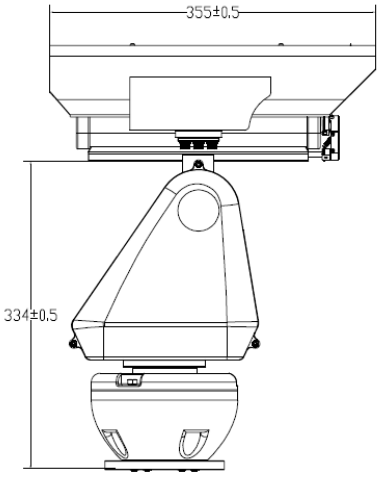
side view dimension diagram

Installation dimensions with Laser IR Lamps





front view dimensions w/ IR (Laser)



side view dimension diagram

4.2 Rotating parameters:

Pan rotation	360ºcontinuous rotation
Tilt rotation	+35º ~ -85º unobstructed rotation
Manual control speed	
Pan	0.1º ~ 100º/Second manual operation
Tilt	0.1º ~ 80º/Second manual operation
Preset speed	
Pan	80º/ Second
Tilt	40º/Second

4.3 Electrical parameters

Input voltage	18VAC, 24VDC, 230VAC, 50/60Hz
Input power	50W; 70W with IR Lamp
Coaxial cable requirement:	75 ohms resistant; complete copper core conductor; complete copper shield layer, shield cover range 95%
Heater, defroster, fan, wiper	

4.4 Camera, lens parameters

Camera Specifications	**DLM1771 - 18X Day/Night**
Image Sensor	1/3" Hitachi CCD
Resolution	540 TVL
TotalPixels	NTSC 380k / PAL 470k
Signal Format	NTSC/PAL
Video Output	1V p-p (sync negative)
Lens	18X optical
Focal Length	f=4.7mm(Wide)~84.6mm(Tele)
Aperture	F1.6~F2.8
Digital Zoom	12X
Min. Working Distance	54.7mm(Wide)~310mm(Tele)
Sync System	internal/external (V-lock)
S/N Ratio	>50dB
Min. Illumination	0.25Color / 0.025BW/LUX
IRIS	Auto/Manual (with Priority)
Focus	Auto/Manual
White Balance	Auto
Gain	Auto
BLC	ON/OFF

Camera Parameters	**DLC1982-26X Day/Night**	**DLC1985–30X Day/Night**	**DLC1985-35X Day/Night**	**DLC1985-36X Day/Night**
Image Sensor	**¼"** Sony CCD	¼ Hitachi CCD	**¼"** Hitachi CCD	**¼"** SONY EXview HAD
Resolution	480/570BW TVL	540/650BW TVL	540/650BW TVL	540/650BW TVL
Effective Pixels	NTSC 380k / PAL 440k	NTSC 410k / PAL 470k	NTSC 380k / PAL 410k	NTSC 380k / PAL 440k
Signal Format	NTSC/PAL	NTSC/PAL	NTSC/PAL	NTSC/PAL
Video Output	1V p-p (sync negative)	1V p-p (sync negative)	1V p-p (sync negative)	1V p-p (sync negative)
Lens	26X SONY	30X Hitachi WDR / Image Stabilizer	35X Hitachi WDR / Image Stabilizer	36X SONY Image Stabilizer
Focal Length	f=3.5mm(W)~91mm(T)	f=3.4mm(W)~102mm(T)	f=3.4mm(W)~119mm(T)	f=3.4mm(W)~122.4mm(T)
Aperture	F1.6~F3.8	F1.4~F3.6	F1.4~F4.2	F1.6~F4.5
Digital Zoom	12X	12X	12X	12X
Min. Distance	320mm(W)~1500mm(T)	55.8° (Wide) to 2° (Tele)	55.8° (Wide) to 1.7° (Tele)	320mm(W)~1500mm(T)
Sync System	internal/external (V-lock)	internal/Line-lock	internal/external (V-lock)	internal/external (V-lock)
S/N Ratio	>50dB	>50dB with WDR	>50dB with WDR	>50dB
Min. Illumination	1.0/0.15BW/LUX 50IRE	0.1/0.01BW/LUX 50IRE	0.05/0.01BW/LUX 50IRE	0.1/0.01BW/LUX 50IRE
IRIS	Auto/Manual	Auto/(offset software)	Auto/(offset software)	Auto/Manual
Focus	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
White Balance	Auto/Manual	Auto/Manual	Auto/Manual	Auto/Manual
Gain	Auto/Manual	0-30dB via software	0-30dB via software	Auto/Manual
BLC	Auto/Manual	In WDR OFF mode ON/OFF	ON/OFF	Auto/Manual

4.5 IR Lamp Parameters

Distance	＞100m
Angle	45º
IR Lens	two pair 7x1W，6 x Φ8
IR lamps conversion efficiency	90%
wavelength	850nm
Voltage	12VDC
Current	2 x 1A
Power	2 x 12W
Measurement（L×W×H）	two units of Φ108× 85mm
Net Weight	2 x 0.5kg

Method of operation 1:

1. Enter into menu by pressing preset 95
2. Enter INFRARED in the AUX menu. ON means open IR; it will start work when the illumination is lower than 1LUX. OFF means close IR.

Method of operation 2:

Use the preset 75 to open the IR lamps. The IR lamps will start working when it is less than 1LUX.
Use the preset 76 to close the IR lamps

Method of operation 3:

Press"2"+"ON" to open the IR lamps, and the IR lamps will start working when it is less than 1LUX.
Press "2"+"OFF"to close the IR lamps

Note: LED or Laser based IR Lamps operate the same way.

5. OPERATIONS

5.1 BASIC DESCRIPTIONS

After connecting wires as per instructions in previous section and turning on power, the pan tilt camera will display its configured information. And after initialization, the menu will show "configure OK" information. If the user sets the POWER UP DONE, the camera will execute this movement and the initial screen disappears; if the user does not set the POWER UP DONE, the initial screen information will be seen until the camera receives the control command, then the initial screen will disappear and show the system communication control is normal. If there is no control command, the initial screen will disappear after 3 minutes.

Power up display：

VERSION	1.9
PROTOCOL	P
ADDRESS	1
COMM	2400.N.8.1
POWER UP DONE	

When configuring：

VERSION	1.9
PROTOCOL	D
ADDRESS	1
COMM	2400. N.8.1
CONFIGURING	

Configure OK:

VERSION	1.9
PROTOCOL	P
ADDRESS	1
COMM	9600.
N.8.1	
CONFIGURE OK	P:000/T:00

NOTE: 1. VERSION 1.8 is the software version number of the P/T camera, and it will change as the product's upgrade.

2. PROTOCOL is PTZ control type - supports P, D protocols, and it will change as the dip switch chooses different protocol.

3. ADDRESS 1 is control address, may support 256 addresses, and it will change as the dial switch chooses different address number.

4. COMM 2400.N.8.1 is communication information, 2400 is communication baud rate, there are 1200, 2400, 4800, 9600 four baud rate for different dip switch. N.8.1 means no verify, 8 data bytes, 1 dwell position.

5.2 Operation Procedures

Upon successful configuration, user may operate the camera as the following way:

OPERATION	PROCEDURE
Pan/Tilt	1. To move via control keyboard, camera will rotate to the operation direction if the joystick leans to one direction of up/down/left/right. The speed depends on the distance between joystick and center. The camera will move slowly to the operation direction if move the joystick lightly in one direction. The camera will speed to maximum if the joystick moves in one direction. The camera will stop when the joystick returns to the center. 2. To control the DLM1772-DLM1775, use either the DLI6335 Keyboard or if a Matrix Switcher is installed, unit will be controlled with DLH6330 Keyboard. Matrix Switchers series box type DLH4200B or bay type DLH4400E features RS-422/RS-485 Data PTZ control ports. 3. To control via computer software, press the direction key of control, the camera will rotate to the operating direction. The speed depends on current speed code. Some software may implement continuous rotation and some only may implement dot movement. Please refer to the software instruction provided by the manufacture for detailed operations. The DLM1772-DLM1775 may do 360^{o} continuous pan rotation and $+2^{o}$~-92^{o} vertical rotations. It will stop rotating when the tilt limit is reached.
STOP SCAN	Preset 96 (hit"9"+"6"+ "Preset")
PRESET TOUR	Preset 98 (hit"9"+"8"+ "Preset")
AUTO SCAN	Preset 99 (hit"9"+"9"+ "Preset")
ZOOM WIDE	1. Press the ZOOM WIDE button or turn the joystick clockwise until the image is acceptable 2. Release the button or joystick
ZOOM TELE	1. Press the ZOOM TELE button or turn the joystick anti-clockwise until the image is acceptable 2. Release the button or joystick
IRIS OPEN	Continuously press key OPEN to open iris and increase brightness gain
IRIS CLOSE	Continuously press key CLOSE to close iris and increase brightness gain
FOCUS NEAR	Continuously press key NEAR, focus become near from far, the image becomes foggy from clear or becomes clear from foggy.
FOCUS FAR	Continuously press key FAR, focus become far from near, the image becomes foggy from clear or becomes clear from foggy.
PRESETS	1. When set presetting, press "preset No."+ key "PRESET"(about for 3 seconds) 2. When use presetting, press "preset No."+ key "PRESET" 3. Please refer to operation instruction book for controller.

PATTERN	a) press pattern scan setting to start b) run the camera as the designed route c) press pattern scan setting to stop d) run the pattern scan, the camera will run the recorded route

5.3 Preset Functions

Preset()	function
1 to 8	Park position
1 to 2	Alarm input
33	180º flip
34	lever home place
65	Start Washer/Wiper
75	Open the IR lamps
76	Close the IR lamps
77	Open wiper function
78	Close wiper function
79	Open Digital zoom
80	Close Digital zoom
81	Auto low lux shift
82	Open law lux shift （B&W menu）
83	Close law lux shift （color menu）
84	Open wide dynamic
85	Close wide dynamic
86	Open Backlight Compensation
87	Close Backlight Compensation
88	Open video freeze
89	Close video freeze
92-93	Scan control limit
94	Exit menu
95	Enter menu
96	Scan stop
98	Preset tour
99	Auto scan

5.4 Screen Character Display

The speed dome has series of screen character display for easy operation. The characters include the lens zoon, orientation, preset setting.
Lens zoon display: the form is X100, 100 mean the current zoom.
Orientation display：N. S. W. E. NW. NE. SW. SE means North, South, West, East, North-west, North-east, Southwest, Southeast.
Preset setting display: PRESET 01 SET. It means the preset position 01 has been successfully set.

5.5 PTZ FUNCTIONS

This series high-speed P/T camera manual pan speed 0.1 º -100 º/second, manual tilt speed 0.1º ~ 80º/second. Pan/tilt speed and lens zoom is proportional, darker the lens zoom, slower the speed is!

The current position of P, T, Z three orientations (presetting positions) may be stored and repeat use.

5.6 FUNCTION DESCRIPTIONS

5.6.1 Screen menu function (OSD)

Camera and pan & tilt may be parameters are displayed by OSD menu

5.6.2 Proportional pan

Horizontal and tilt speed change automatically with the zoom changes. When wide zooming, the camera speeds down. When narrow zooming, the camera speeds up to allow better tracking effect.

5.6.3 Auto scan

Auto scan refers to the function of 360^0 continuous scan the images at certain speed on the horizontal lever when keeping the pitch angle unchanged. The left and right limits may be set for continuous scan at certain speed on the horizontal lever.

5.6.4 Installation mode

The camera may be installed upwards or upside down according to requirements. The image will always be showed positive on the monitor no matter the installed position.

5.6.5 Preset

Any position of P/T camera PTZ may be stored. We call it preset (pre-established position). The preset may be transferred and deleted.

5.6.6 Preset tour

The P/T camera will transfer pre-established preset 1-8 every 10 second. It will leap over to next preset position if position in not any of the 1-8.

5.6.7 Pattern

The PTZ orientation and specific tracking pattern may be stored. The pan & tilt UP, DOWN, LEFT, RIGHT and the lens' FAR, NEAR parameters may be stored. Also we may call the presetting. This function may be used to record and simulate the operator's operation process.

5.6.8 Position Zero

The camera will turn to horizontal and tilt zero by preset 34 when accidental desynchronizing appears or the operator wants to find zero position during working process. It may reset the orientation as a convenience for the operator

5.6.9 Low lux (color / black & white) function

The camera automatically changes CCD lux according to surrounding light. Color image changes to black & white in low lux; black & white image changes to color in high lux (camera dependent)

5.6.10 Auto focus

The camera automatically adjusts lens focus to keep clear image if auto focus mode. Manually operate FAR or NEAR focus adjustment may also adjust focus. The P/T camera will recover auto focus adjustment function if operate horizontal, vertical rotation or control lens zoom.

5.6.11 Auto iris function

The camera automatically adjusts iris to keep normal brightness in auto iris mode. Manually operate OPEN or CLOSE iris adjustment button may also adjust iris. The P/T camera will recover auto adjustment function if operate horizontal, vertical rotation or control lens zoom.

5.6.12 Backlight compensation

The object will become black as the shadow if strong light appears in background. Backlight compensation function may compensate the brightness automatically to dark objects in bright light background and adjust the brightness background to avoid the image full of brightness and get clear image. Too strong backlight may make the object illegibility.

6. MENU OPERATION

This series camera has in-built menu to setup to camera and lens' parameter. In this chapter, you will get a whole knowledge of the camera, and get some useful operation skills.
The basic operation of the menu includes: move menu bar, enter next menu, turn back to previous menu, change setting value, confirm change and cancel change.

This P/T camera opens menu by preset 95 and exit by preset 94 according to P control protocol. Please refer to controller instruction book for other control equipments.

Press "9"+"5"+"PRESET"
Press key 95+ PRESET to enter pan tilt camera menu
Press "9"+"4"+"PRESET"
Press key 94+ PRESET to exit pan tilt camera menu

6.1 MENU OPERATIOS INSTRUCTIONS

The DLM1771-DLM1772-DLM1775 series P/T camera system is set by default to P/D protocol. Use preset position No.95 to open the main menu. For other protocols, please refer to protocol instruction.
The basic operation of the menu includes: move menu bar, enter next menu, turn back to previous menu, change setting value, confirm change and cancel change.

Control up and down command: move menu bar and change setting.
Iris open command: enter camera menu or select menu to verify change
Iris closed command: return former menu and cancel change

Please open menu by preset 95 and exit by preset 94 according to P/D control protocol.
Please refer to controller instruction book for other control equipments.

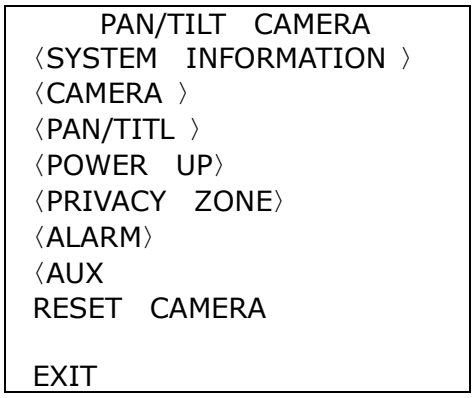
Press "9"+"5"+"PRESET"
Press key 95+ PRESET to enter pan tilt camera menu
Press "9"+"4"+"PRESET"
Press key 94+ PRESET to exit pan tilt camera menu

NOTE:
1. "< >"symbol means it contains next menu
2.use "up, down" key to move cursor "→", use "OPEN or CLOSE" key to confirm or exit the menu
3. When press "OPEN" key, the cursor becomes"□", then may use "UP or DOWN" key to amend the parameter; press OPEN key when finish your amendment.

6.2 MAIN NENU

〈SYSTEM INFORMATION〉
〈CAMERA 〉
〈PAN/TITL 〉
〈POWER UP〉
〈PRIVACY ZONE〉
〈ALARM〉
〈AUX〉
RESET CAMERA

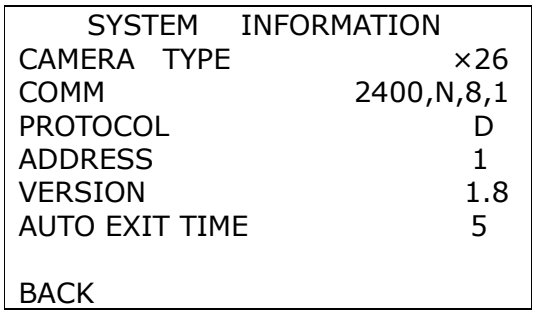
EXIT



6.3 THE SECOND MENU I

6.3.1 System information menu

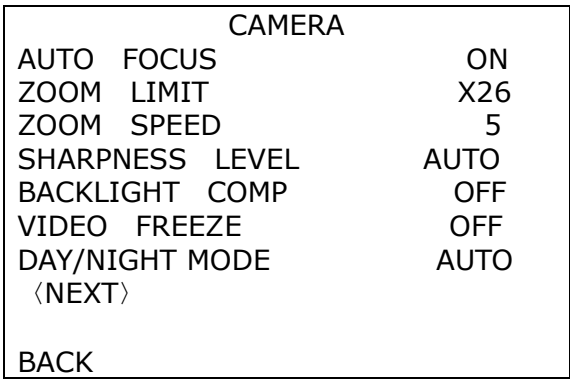
DOME TYPE
COMM
PROTOCOL
ADDRESS
VERSION
AUTO EXIT TIME , 5,6,7,8,9,10 minutes
BACK



NOTE: Except "AUTO EXIT TIME", other items may not modify but only display in the menu**.**

6.4 CAMERA MENU I

AUTO FOCUS
ZOOM LIMIT
ZOOM SPEED
SHARPNESS LEVEL
BACKLIGHT COMP
VIDEO FREEZE
DAY/NIGHT MODE
〈NEXT〉
BACK



NOTE: The function of stabilizer and WDR will depends on the module function, if the function shows in the menu; it means the function is available.

AUTO FOCUS **Default Setting: ON**
FOCUS MODE: ON and OFF

ZOOM LIMIT **Default Setting: X26**
Zoom Limit is show different limitation with different camera

ZOOM SPEED **Default Setting: 5**
Range of zoom speed is between 0~7, different camera shows different zoom

SHARPNESS LEVEL **Default Setting: 10**
Sharpness lever is between 0~15 and AUTO

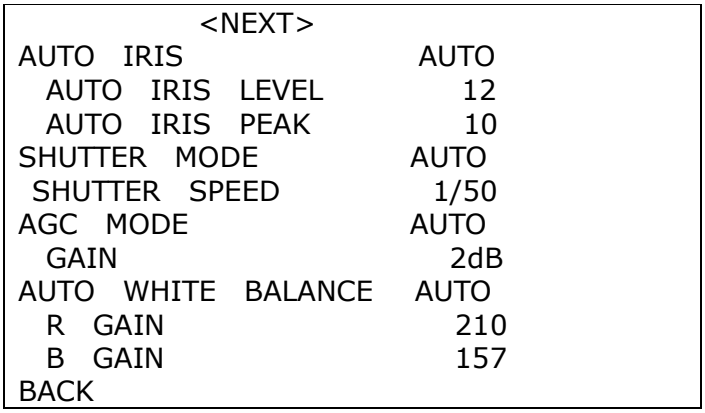
BACKLIGHT COMP **Default Setting: OFF**
Backlight COMP: ON and OFF

VIDEO FREEZE **Default Setting: OFF**
Video Freeze Mode: ON and OFF

DAY/NIGHT **Default Setting: AUTO**
Day/Night Mode: Auto-change, Day pure color, Night pure black/white

6.5 CAMERA MENU II

AUTO IRIS
AUTO IRIS LEVEL
AUTO IRIS PEAK
SHUTTER MODE
SHUTTER SPEED
AGC MODE
GAIN
AUTO WHITE BALANCE
R GAIN
B GAIN
BACK



AUTO IRIS **Default Setting: AUTO**
Auto Iris: AUTO and MAN

AUTO IRIS LEVEL **Default Setting: 12**
When the auto iris is under the circumstances of MAN, 0~17 may be selected.

AUTO IRIS PEAK **Default Setting: 10**
When the auto iris is under the circumstances of MAN, 0~10 may be selected

SHUTTER MODE **Default Setting: AUTO**

Shutter Mode: AUTO and MAN

SHUTTER SPEED **Default Setting: 1/50**

When shutter speed under the circumstances of MAN, 1/1~1/10000 may be selected, which is according to the camera parameter.

AGC MODE **Default Setting: AUTO**

AGC MODE: Auto and MAN

GAIN **Default Setting: 2db**

Gain Level may be selected between 0~28

AUTO WHITE BALANCE **Default Setting: AUTO**

Auto White Balance Mode: AUTO and MAN

R GAIN **Default Setting: 21**

When auto white balance is under the circumstance of MAN, 0~255 may be selected.

B GAIN **Defaulting Setting: 157**

When auto white balance is under manual control, 0~255 may be selected

6.6 PAN/TILT MENU

AUTO FLIP
PROPORTIONAL PAN
PARK ACTION
PARK TIME
PRESET TOUR TIME
SCAN SPEED
MANUAL STOPS
SCAN STOPS
ANGLE DISPLAY
SET COORDINATES ZERO
BACK

PAN/TILT	
AUTO FLIP	ON
PROPORTIONAL PAN	OFF
PARK ACTION	NONE
PARK TIME	30min
PRESET TOUR TIME	5s
SCAN SPEED	10d/s
MANUAL STOPS	OFF
SCAN STOPS	OFF
ANGLE DISPLAY	ON
SET COORDINATES	ZERO
BACK	

AUTO FLIP **Default Setting: ON**

Auto Flip Mode: ON and OFF

PROPORTIONAL PAN **Default Setting: OFF**

Proportional Pan Mode: ON and OFF

PARK ACTION **Default Setting: NONE**

Park Action Mode: there are 12 modes such as NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN and so on

PARK TIME **Default Setting: 30minutes**

Park Time: 2~60 min selectable

PRESET TOUR TIME **Default Setting**：**5s**

Preset tour time: 5~60 min selectable

SCAN SPEED **Default Setting: 10d/s**

Scan Speed: 1 d/s~40 d/s selectable

MANUAL STOPS **Default Setting: OFF**

Manual Stops Mode: ON and OFF

SCAN STOPS **Default Setting: OFF**

Manual Stops Mode: ON and OFF

ANGLE DISPLAY **Default Setting: ON**

Angle Display Mode: ON and OFF, orientation of P/T and camera zoom may display when it is ON.

SET COORDINATES ZERO

Turn the camera to the position that would be defined to be COORDINATES zero at first, then press OPEN key to confirm it.

6.7 INITIALIZATION (powering up)

POWER UP ACTION
POWER UP TIME

BACK

POWER UP	
POWER UP ACTION	NONE
POWER UP TIME	2 min
BACK	

POWER UP ACTION **Default Setting: NONE**

Power Up Action Mode: NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN selectable.

POWER UP TIME **Default Setting: 2minutes**

Power Up Time may be selected from 2s to 10s

6.8 PRIVACY ZONE MENU

Note: only the items with privacy function may enter this menu.

SONY series module：

PRIVACY NO
SET DISPLAY
WIDTH
HEIGHT
COLOR
TRANSPARENCY
PRESET 64 ALLOW
PRESET 1 ALLOW
ZOOM ×1 ALLOW
SAVE
BACK

PRIVACY ZONE	
PRIVACY NO	1
SET DISPLAY	OFF
WIDTH	1
HEIGHT	1
COLOR	
BLACK	
TRANSPARENCY	OFF
PRESET 64 ALLOW	ON
PRESET 1 ALLOW	OFF
ZOOM ×1 ALLOW	OFF
SAVE	
BACK	

Note: In the status of non-menu, use the 63+preset,a centerline will appear in the screen（the centerline is used for the set of privacy zone accurately）.Move the Pan/Tilt to the place which needs the privacy, and ensure the center point of the centerline is in the center of the centerline. If the place needing privacy are not so large, user may also change the zoon if needs, and ensure the center point of the place needing privacy are in the center of the centerline.

PRIVACY NO default setting is：1

Privacy No. is available from 1~24, 24 privacy zones may be set and most 8 privacy zones set at each image.

SET DISPLAY default setting is：OFF

Set display has "ON" and "OFF"

ZONE WIDTH default setting is：1

Zone width is optional from 1~80.

ZONE HEIGHT default setting is：1

Zone height is optional from 1~60.

ZONE COLOR default setting is： BLACK

Zone color concludes BLACK, GRAY1, GRAY2, GRAY3, GRAY4, GRAY5, GRAY6, WHITE, RED, GREEN, BLUE, CYAN, YELLOW, MAGENTA

TRANSPARENCY default setting is：OFF

Zone transparency has "ON" and "OFF"

PRESET 64 ALLOW default setting is：ON

Preset 64 allow has "ON" and "OFF"

Note：ON: allow the function of 64 presets; OFF: prohibit the function of 64 preset.

When it is ON, and it is in the status of non-menu, the all privacy zone will be open when setting 64 preset; and closed when using 64 preset. This kind of function is for the open and close of the whole privacy.

PRESET 1 ALLOW default setting is：OFF

PRESET 1 ALLOW has "ON" and "OFF"

Note：ON: allow the special function of the 1 preset; OFF: prohibit the special function of 1 preset.

When it is ON and it is in the status of non-menu, use the 1 preset, then the Pan/Tilt and camera will run to the position of 1 preset, and close the all privacy; and the privacy will appear when moving the Pan/Tilt or changing the zoom of the camera.

ZOOM ×1 ALLOW default setting is：OFF

ZOOM ×1 ALLOW has "ON" and "OFF"

Note：ON: allow the special function of camera 1x limit. OFF: close the special function of camera 1x limit.

When it is ON, and the camera is in 1x optical zoom, the privacy zone will not be shown. All will appear when the camera is above 1x optical zoom.

When it is OFF, all the privacy will be shown no matter what optical zoom the camera is in.

Special:

When the <ZOOM X1 ALLOW> and <PRESET 1 ALLOW> are both in ON, the all privacy will close by transferring the preset 1.when moving the Pan/Tilt or zooming the camera in the place of preset 1, there will be 2 kind of situation: 1> if the optical zoom of the camera is above 1x, the privacy will appearance immediately; 2> if the zoom is less than 1x, the privacy will not appear. By transferring other presets, there will be also two kinds of situations: if the optical zoom recorded in this preset is less than 1x, the privacy will not appear; if it is above 1x, the privacy will appear immediately.

SAVE

Save the privacy data which has been successfully set.

Note: If the SAVE command is not executed and exit directly, all the data which have been set will be invalid.

6.9 ALARM INPUT

ALARM 1
ALARM 2

ALARM	
ALARM	1
NONE	
ALARM	2
NONE	
BACK	

BACK

ALARM 1(ALARM INPUT 1) default setting is ： NONE
ALARM INPUT 1 may choose NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN

ALARM 2 (ALARM INPUT 2) default setting is：NONE
ALARM INPUT 2 may choose NONE, 1PRESET~8PRESET, SCAN, PRETOUR, PATTERN

6.10 AUX CONTROL

WIPER
INFRARED
AUX3
BACK

AUX	
WIPER	**SINGLE**
INFRARED	OFF
AUX3	OFF
LINKAGE TIME (washer/Wiper)	5sec
BACK	

WIPER (Wiper Control) default setting is：OFF
See 6.12
INFRARED (IR lamps control) default setting is：OFF
IR lamp controls may be chosen by ON, OFF

AUX3（**External Relay Control**） default setting is：OFF
Standby AUX control may be chosen by ON, OFF

WIPER CONTROL, IR LAMPS CONTROL, **AUX CONTROL** may be opened by using "1+ON", "2+ON", "3+ON", and closed by using "1+OFF", "2+OFF", "3+OFF".

LINKAGE TIME (Washer/Wiper) default setting is: 5sec
5s, 10s, 15s, 20s, 25s, 30s are selectable. The wiper will run another 5s based on the selected time. LINKAGE TIME should be selected before exiting OSD and using preset 65 to get washer/wiper combined function to operate. Read 6.12 below.

6.11 RESET CAMERA
If you choose the RESET CAMERA, all will return to default setting.

6.12 **Washer/Wiper Combined functions**, FIRST enter OSD Menu in the AUX sub-menu and under Linkage Time choose correct setting of time required.

Washer/Wiper time：5s, 10s, 15s, 20s, 25s, 30s are selectable choices. The wiper will run another 5s based on the selected time.

EXIT OSD MENU, then use PRESET 65. The Pan/Tilt will first rotate to the preset 65 position. The preset 65 function is to first position the washer to face the camera housing glass (lens) to ensure the washer sprays water on to the housing glass cover. The command Preset 65 will then start **Washer/Wiper function** to run the wiper and washer simultaneously. The washer will stop spraying after the wiper rotates for one complete cycle.

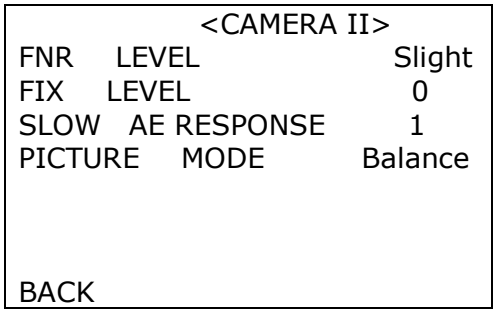
Each time user wishes to operate Washer/Wiper, user must choose Preset 65 to start the function for one complete washer/wiper cycle.

WIPER CONTROLS - in OSD the wiper control output has two setting options: **Single-Control mode and Cycle-startup mode.**

Single-control mode: use PRESET 77 or press "1+ON" or set in the AUX menu and choose **single-control mode function** – it only controls WIPER. The wiper will run for 15 min and stop after that or by using 78 preset or by press "1+OFF".

Cycle startup mode: use PRESET 77 or press "1+ON" or set in the AUX menu and choose **cycle startup mode function** – it only controls WIPER. The wiper will run for 5 sec, then stop for 15 sec. It will not stop until it receives the control instruction for stop (using 78 preset or by press "1+OFF").

6.13 DLM1771 Integrated PTZ Menu for HITACHI 18x Day/Night 1/3" CCD camera



FNR LEVEL（Frame Noise Reduce）defaulted setting：Slight

There are total 6 FNR modes: Slight, Weak, Medium, Strong, Fix, OFF
FIX LEVEL defaulted setting：0
When choose FIX under FNR LEVEL menu, can make Fix level setting, range: 0～15
SLOW AE RESPONSE (slow shutter) default setting：1
Range: 1～255;
PICTURE MODE defaulted setting：Balance
2 mode：Balance and VIVID

Adjustment of IRIS Set points

Enter <CAMERA>, enter <NEXT>, set AUTO IRIS to MAN (manual), then set AUTO IRIS LEVEL and AUTO IRIS PEAK parameters accordingly

7. DIP SWITCH SETTING

7.1 Pan/tilt Controls

Note: When one control bus controls several (more than 2) Pan/Tilt cameras, it needs a 120ohm resistance at +/- terminals Com RS-485 in the farthest end of pan tilt camera in order to ensure the normal work of control signal.

7.2 Switch setting for SW1

Note: Switch SW1 is used to set protocol, camera and baud rate

Protocol, camera, baud rate	SW1 setting							
	1	2	3	4	5	6	7	8
PELCO-P Protocol	ON	OFF	--	--	--	--	--	--
PELCO-D Protocol	OF	ON	--	--	--	--	--	--
SONY camera	--	--	ON	OFF	ON	OFF	--	--
HITACHI camera	--	--	OFF	ON	ON	OFF	--	
1200	--	--	--	--	--	--	OFF	OFF
2400	--	--	--	--	--	--	ON	OFF
4800	--	--	--	--	--	--	OFF	ON
9600	--	--	--	--	--	--	ON	ON

7.3 Switch setting for SW2

Note: Switch SW2 is used to set receiving address.

Protocol P addresses setting:

Address	Switch setting							
	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-	SW2-
1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
7	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
8	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
9	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
11	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
12	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
13	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
14	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
15	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
16	ON	ON	ON	ON	OFF	OFF	OFF	OFF
17	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
19	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
20	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
21	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
22	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
23	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
24	ON	ON	ON	OFF	ON	OFF	OFF	OFF
25	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
26	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
27	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
28	ON	ON	OFF	ON	ON	OFF	OFF	OFF
29	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
30	ON	OFF	ON	ON	ON	OFF	OFF	OFF
31	OFF	ON	ON	ON	ON	OFF	OFF	OFF
32	ON	ON	ON	ON	ON	OFF	OFF	OFF
-----	----	----	----	-----	----	----	----	----
255	OFF	ON	ON	ON	ON	ON	ON	ON
256	ON	ON	ON	ON	ON	ON	ON	ON

Protocols D address setting:

Address	Switch setting							
	SW2-1	SW2-2	SW2-3	SW2-4	SW2-5	SW2-6	SW2-7	SW2-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
----	----	----	----	----	----	----	----	----
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

Appendix A TROUBLESHOOTING

1. Image

Problem: No image displayed on monitor?

☐First check if the power supply wire connection, voltage, indicator and P/T camera work well, and then check the video wires, or it may be a problem with the cam module.

Problem: Image becomes black after self check, but may be controlled

☐Control system may have changed the camera iris parameters. Enter the camera menu then reset camera.

Problem: Image becomes foggy when P/T camera connects with hard disk video recorder.

☐Maybe it is related with the compressed card of hard disk video recorder.

Problem: abnormal display of image

☐Check the video connecting wires, connecting sockets and camera flat wires.

Problem: Iris is small with many snowflakes after connection

☐The camera parameter has changed. Please enter the menu to reset the camera.

Problem: The camera may only focus in one position, other positions do not focus.

☐Change the position of P/T and see if condition persists. If yes, it may be caused by camera control drive focus system.

Problem: image may not be clearly seen even at MAX. Zoom

☐Maybe electronic zoom open or the observed object is too close for imaging.

Problem: the image is reddish or greenish. Does the WB parameter change?

☐The camera parameter changed. Enter the menu to reset the camera.

Problem: the color - to black & white function in camera does not change

☐Rotate control to other angle and see if condition changes. If not, reset camera parameter.

2. PTZ Controls

Problem: the single pan tilt camera may not be controlled by keyboard or other control equipment?

☐First check if control line RS-485 is well connected to designed position with right direction. Then check the control equipment and P/T control protocol, baud rate and address. If it still may not be controlled, use elimination to check whether the control equipments or camera has troubles.

Problem: single pan tilt may be controlled but multi-cameras may not be controlled

☐It may be caused by reflection of signal RS-485. Merge a 120 ohm resistance to the RS-485 terminal control wires of the farthest camera.

Problem: other controls are normal except it may not rotate at a direction.

☐First check if any mechanical troubles without powering unit. If it may run well, check if the belt broke or is loose. If yes, it is caused by the control decoder board troubles.

Problem: the pan tilt automatically rotates after power on.

☐First check if the power on mode is auto scan mode; if not, firstly cut RS-485 control lines to see if it persists. If it stopped, it may be caused by the scrambled code from controller or interference to RS-485 lines.

Problem: the provided keyboard software may control, but the DVR may not control or only may control some?

☐DVR control protocol is not compatible with the product or the function is not complete.

Problem: why does the same pan tilt have different control speeds at different hard disk video recorder?

☐Speed command codes in control software of DVR are different.

Problem: DVR may not control speed of pan tilt

☐Control command code of control software in DVR only has a fixed speed.

Problem: the camera rotates disorderly. The image is blackish or whitish.

☐There is interference with the RS-485 lines, check the equipment in the lines such as optical transmitter and receiver.

Problem: the pan tilt camera may be controlled normally in the morning and evening, but it may not be controlled at the noon of summer.

☐High temperature may cause lower down of control line anti-jamming or change to control equipment and CMOS chips parameters to create problems. Check if the temperature is over than the specified limit and if fan is functioning.

Problem: pan tilt camera continuously does self-check up after power on

☐The supply voltage is too low or the power is not enough. The matching transformer of 3.5A 24VDC (if VDC was specified) is recommended. The installation distance should be no more than 30m.

3. Installation

Problem: what is the maximum distance of video wire and what requirements does it have to wire materials?

☐The video wire also has inner loss as the power wire. The more the wire is and the small the specification is, the worse loss it will be. The high the signal frequency is, the obvious the loss is. The normal video wires models and the MAX. Transmission distance is listed in following table:

Video wire model	Max. distance	Video wire model	Max. distance
75-2	About 150m	75-5	About 370m
75-3	About 200m	75-7	About 500m
75-4	About 270m	75-9	About 680m

Problem: what wire and transmission distance should RS-485 control line take?

☐Transmission distance of RS-485 is related to wire diameter and transmission speed. Max. Transmission distance for RS-485 is 1200m according to the specified 9600b/s transmission speed for 1.0mm 2 UTP.

Remarks: the same model wires may be different for produced by different manufacturers. Above data is the normal wire transmission reference distance.